

**SOUTHWEST FISHERIES SCIENCE CENTER
FOURTH QUARTER REPORT-FY 2003
For the Period July 1 - September 30, 2003**

Submitted By: Norman Bartoo, Acting Director, Fisheries Resources Division.

Title of Accomplishment or Milestone: HMS stock assessment in the western and central Pacific Ocean

Current Status of Accomplishment or Milestone: Stock assessment of highly migratory species (HMS) in the western and central Pacific Ocean (WCPO) is an ongoing process, typically characterized by annual status updates discussed at international meetings. Fisheries Resource Division (FRD) scientists played an active role in this process during the 4th quarter of FY03.

Background: Generally, a mature stock assessment process—data collection, assessment analyses, and critical review—does not come to fruition until a formal fisheries management system has been in place for several years. While the proposed Western and Central Pacific Fisheries Commission (WCPFC) may be formally established within the next year or so, no management system currently exists for HMS in the WCPO, and the associated stock assessment process is still in the formative stages. Important decisions regarding the stock assessment process need to be made in the near future. These decisions will greatly influence the quality of future HMS stock assessments in the WCPO and subsequently, the success of HMS management in the WCPO.

Purpose of Activity: FRD scientists have a great deal of hands-on experience with mature stock assessment processes in other areas, e.g. HMS in the Atlantic Ocean (ICCAT), groundfish in the Atlantic (ICES and NAFO), groundfish and coastal pelagics in the North Pacific (PFMC), etc. Active involvement of FRD scientists, in collaboration with their colleagues from other HMS-fishing nations, is crucial for establishing a mature stock assessment process for HMS in the WCPO.

Description of Accomplishment and Significant Results: FRD scientists participated in several international meetings related to HMS stock assessment in the WCPO. The Standing Committee for Tuna and Billfish (SCTB) met in Australia during 7-16 July 2003. FRD scientists presented papers and participated actively in the plenary session as well as in the working group (WG) sessions (Assessment Methods WG, Statistics WG, and Fishing Technology WG). Stock assessments were discussed for yellowfin tuna, bigeye tuna, skipjack, and south Pacific albacore. Particularly important topics were determination of the most appropriate stock assessment models for HMS in the WCPO and species identification issues for small yellowfin and bigeye tuna. FRD scientists also participated in the meeting of the Scientific Coordinating Group (SCG) during 17-18 July 2003, which was also held in Australia immediately following the SCTB meeting. Finally, FRD scientists traveled to Japan in August 2003 to carry out collaborative research on mathematical models for use in assessing HMS in the WCPO.

Problems: The stock assessment model that is being proposed for HMS stock assessment in the WCPO (Multifan-CL) is a complex mathematical model that requires the estimation of 2000-3000 parameters. While such models have been used as research tools, there is little precedence for the use of such highly-complex models in mature stock assessment processes that support active fisheries management. Great care, attention, and commitment of resources will be needed to ensure that results from such models receive necessary critical review before they are used to support fisheries management.

Key Contact: Ray Conser (858) 546-5688